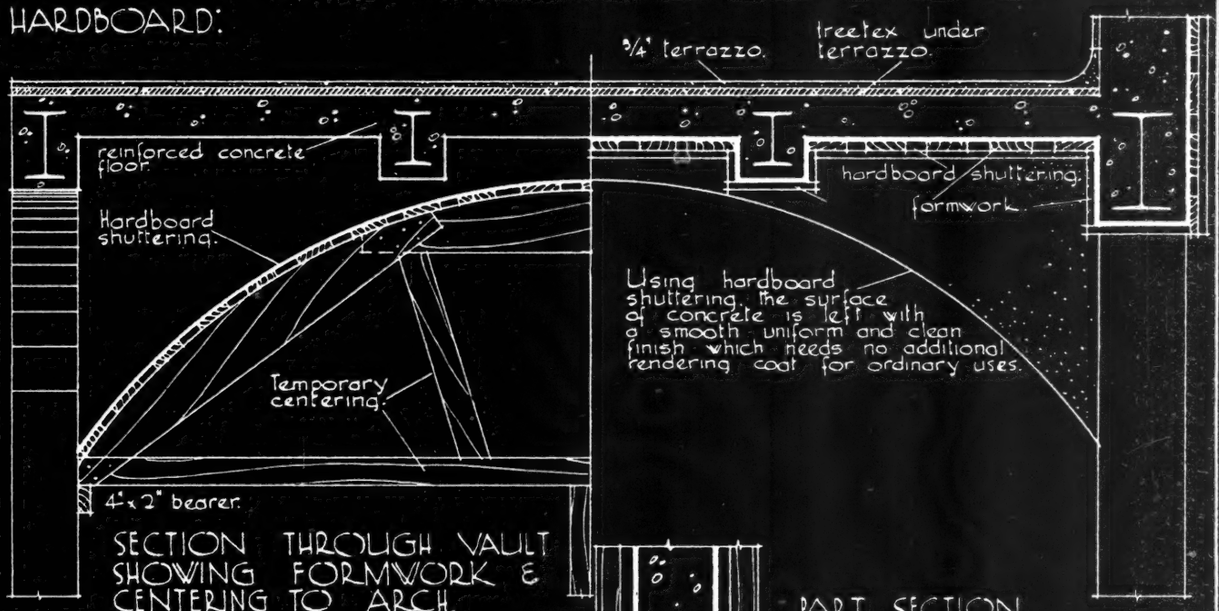
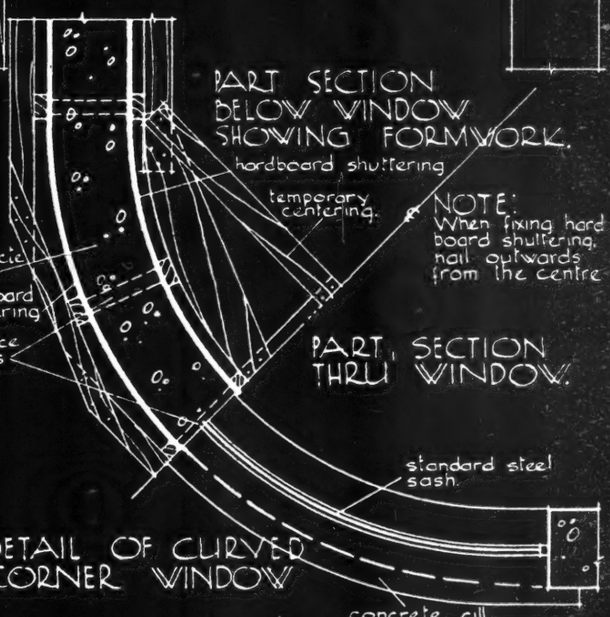
INSULATING BOARD, WALLBOARD, and BUILDING BOARD: HARDBOARD:


¾" terrazzo.
Treetex under terrazzo.
reinforced concrete floor.
hardboard shuttering.
formwork.
Hardboard shuttering.
Using hardboard shuttering, the surface of concrete is left with a smooth uniform and clean finish which needs no additional rendering coat for ordinary uses.
Temporary centering.
4"x 2" bearer.

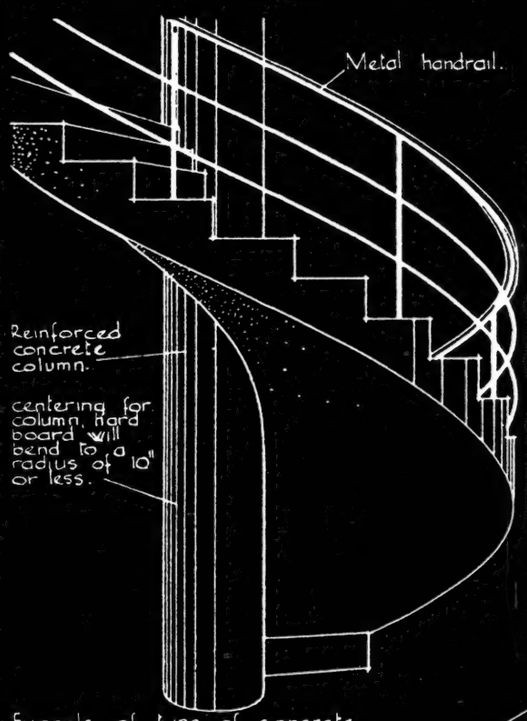
SECTION THROUGH VAULT SHOWING FORMWORK & CENTERING TO ARCH.

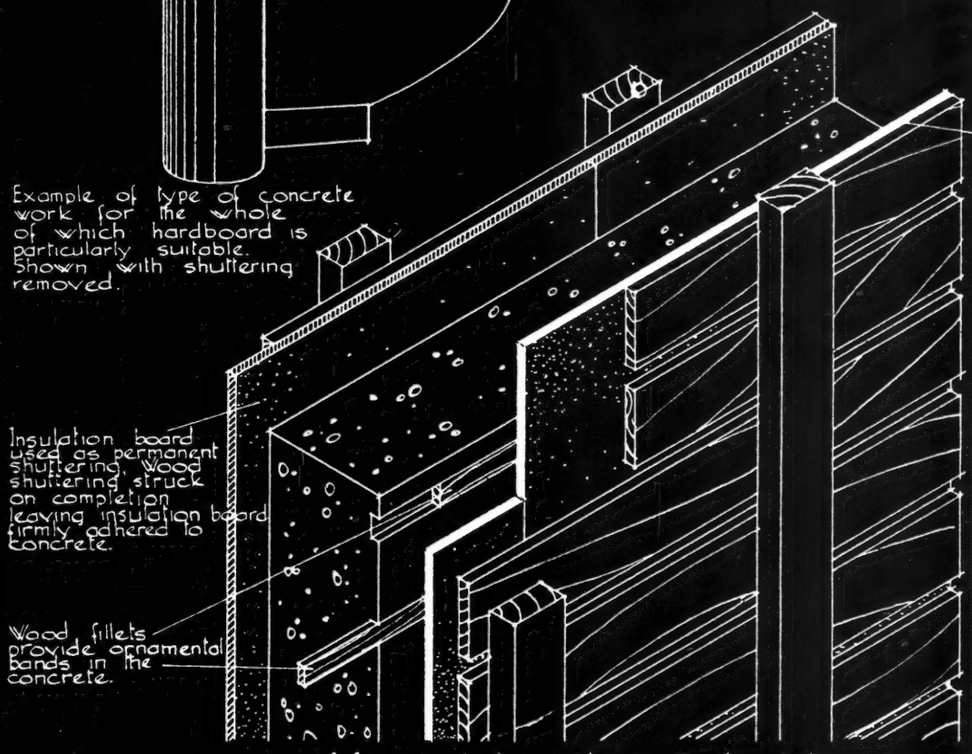


PART SECTION BELOW WINDOW SHOWING FORMWORK.

PART SECTION THRU WINDOW.

DETAIL OF CURVED CORNER WINDOW




Example of type of concrete work for the whole of which hardboard is particularly suitable. Shown with shuttering removed.
Hardwood shuttering externally, struck on completion leaving a hard smooth surface.
Insulation board used as permanent shuttering. Wood shuttering struck on completion leaving insulation board firmly adhered to concrete.
Wood fillets provide ornamental bands in the concrete.

ISOMETRIC SHOWING USE OF HARDBOARD & INSULATION BOARD

Information from Messrs. Treetex Ltd.

WALLIS GILBERT & PARTNERS. CHARTERED ARCHITECTS. 15 ELIZABETH ST. LONDON.S.W.1. J.K.G.

SHEET 6.

Schedule of Blue Print Working Drawings.

General data on sizes, weights, packing and nailing, including composite Insulating Board.

Modern treatment of joints, etc.

Sound Insulation of floors and ceilings (Constructional details).

Sound and Thermal Insulation of roofs, walls and partitions.

Suggestions for modern decorative treatment, eliminating jointing.

Application of Hard Board in modern construction (Building).

Application of Hard Board in modern construction (General utility).

Refrigerator Insulation and the prevention of Condensation.

Recommendations regarding acoustical construction of Cinemas and Public Halls.

Application of Insulating Board to modern agricultural and industrial structures (a).

Application of Insulating Board to modern agricultural and industrial structures (b).

Insulating Board as a foundation for surfacing materials and decorative finishes.

Selected copies of the above mentioned working drawings will appear periodically in this Journal, but all registered members of the architectural and allied professions desiring individual copies of same or the complete series giving all possible data in connection with Insulating Board are invited to make written application to TREETEX Ltd., Shell-Mex House, Strand, London, W.C.2.

As the number of Blue Print drawings available is strictly limited, early application is desirable from those wishing copies to be reserved.

In order to prevent these sheets being lost and to facilitate easy reference, Messrs. Treetex Ltd. will supply on request, without charge, a suitable file for the retention of the same.

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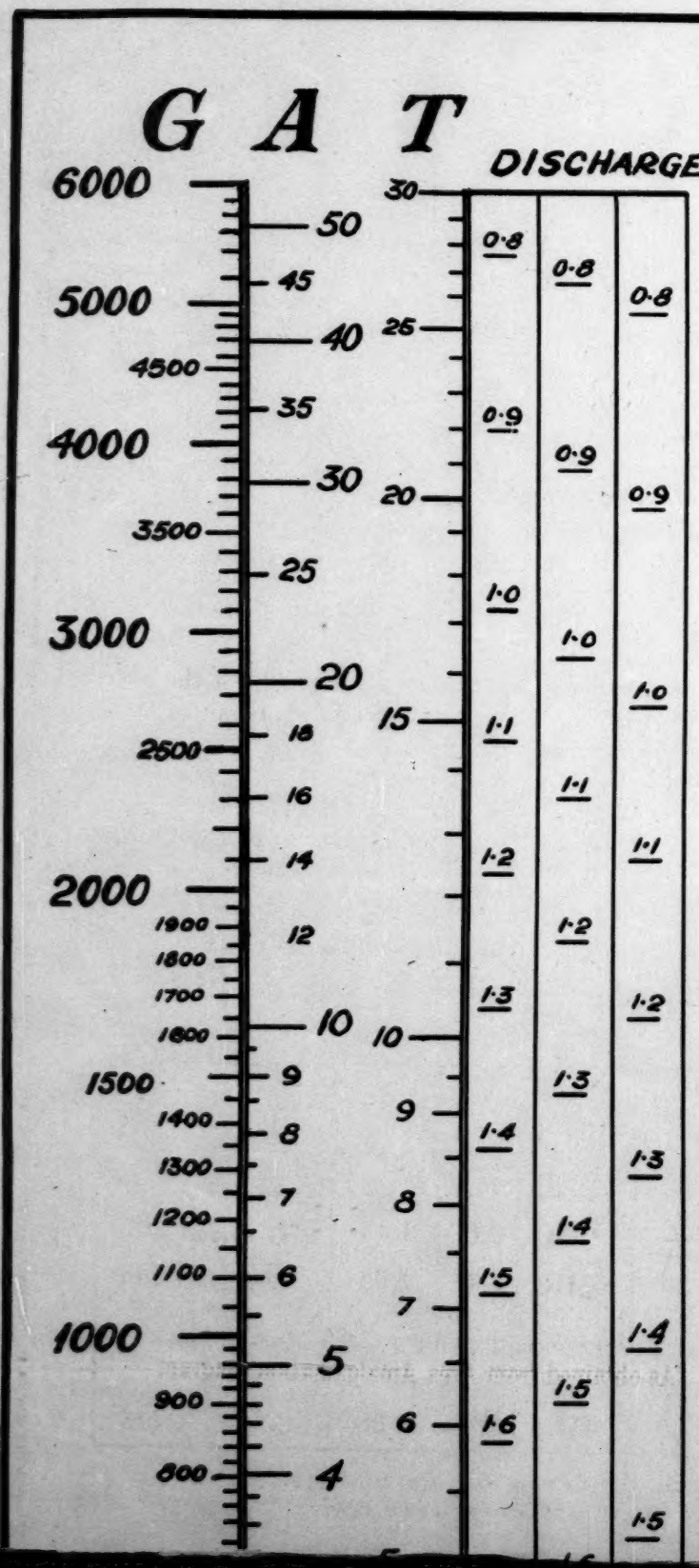


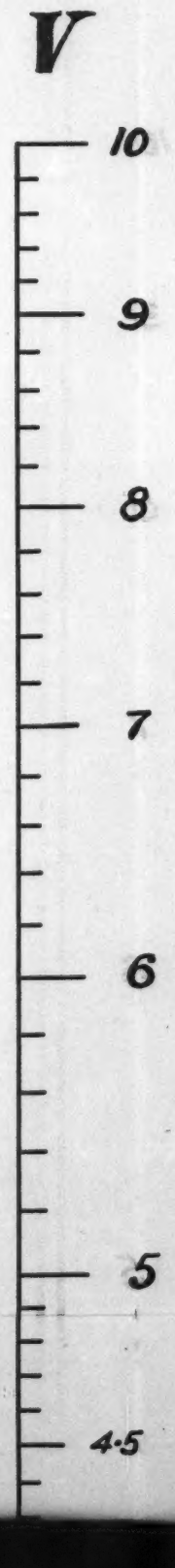
G =
A =
T =
L =
D
Q
V

BUILDER" DRAINAGE CAL

Alignment Chart based on the Ministry of Health's Sto

= Gradient
= Impermeable Area in acres
= Time of concentration in minutes
= Length of sewer in feet
= Diameter of sewer in inches
= Discharge & Capacity in cubic feet per second
= Discharge per acre
= Velocity in feet per second

Based on Crimp and Bruges formula $V = 124\sqrt[3]{r^2}\sqrt{s}$ where V = velocity in feet per second, r = hydraulic mean depth in feet, S = sine of slope of hydraulic gradient, and Ministry of Health formula $R = \frac{40}{T+20}$ when $T > 20$ & $\frac{30}{T+10}$ when $T < 20$ where R = intensity of rainfall in inches per hour, & T = duration in mins.



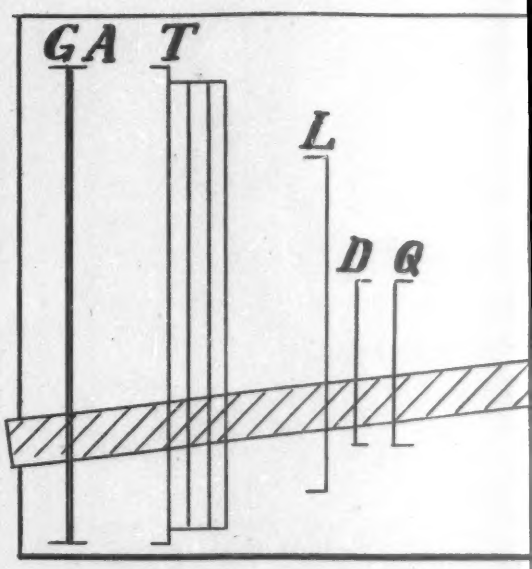


Fig. 1. Using the Straig

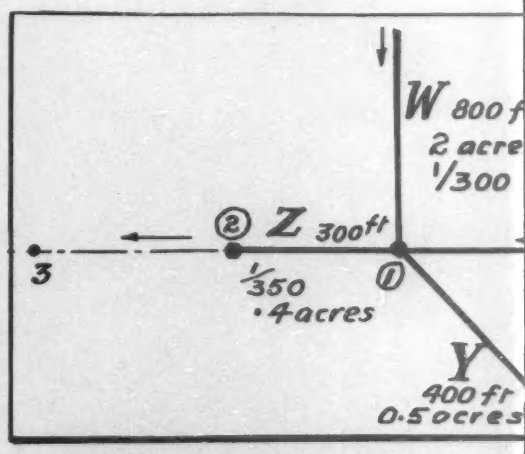


Fig. 2. Computing Comb

AREA AM

DRAINAGE CALCULA

ased on the Ministry of Health's Storm Water For

per second

$V = 124\sqrt[3]{r^2}\sqrt{s}$ where
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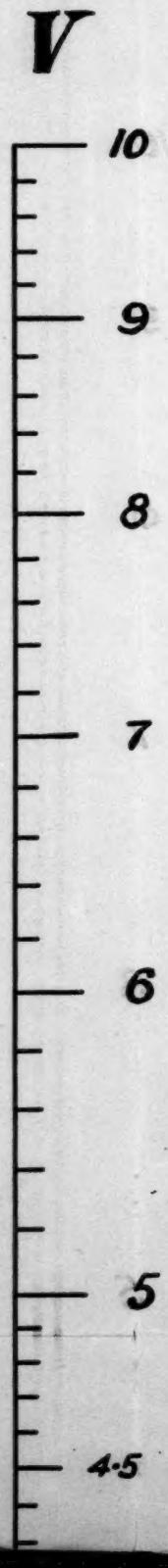
, and Ministry of Health
$\frac{30}{T+10}$ when $T < 20$ where
our, & T = duration in mins.



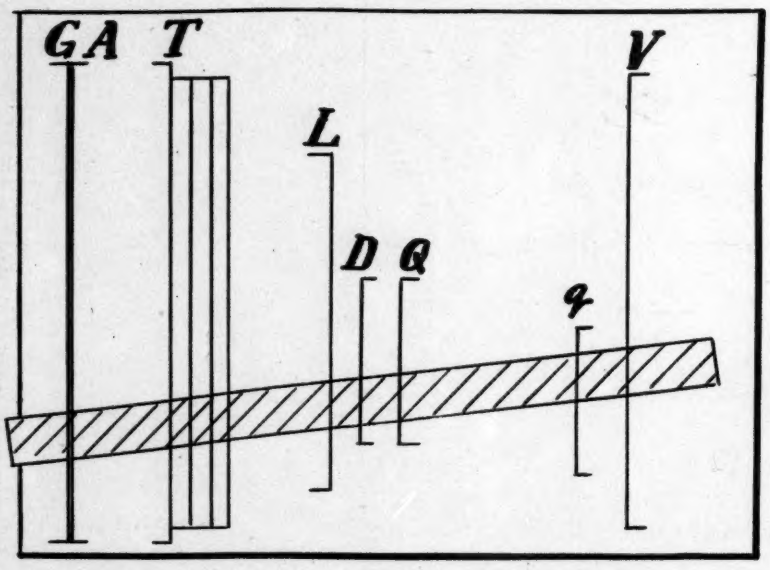


Fig. 1. Using the Straight Edge.

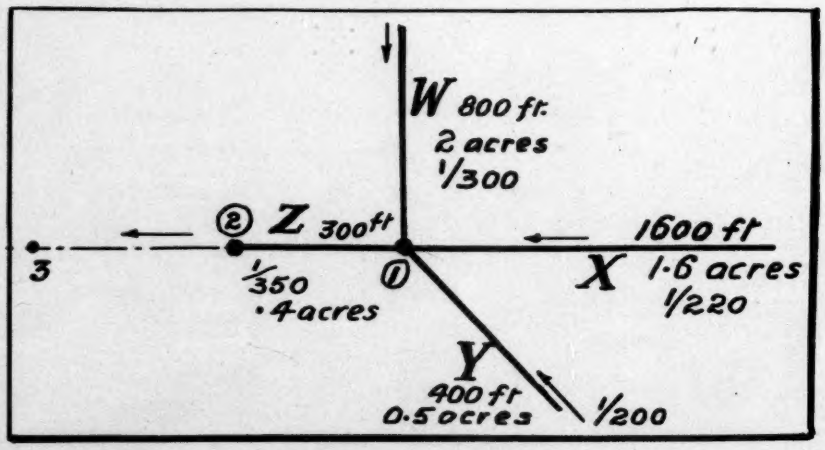


Fig. 2. Computing Combined Areas.

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AREA AMALGAMATIO

DIAGRAM

A

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Instructions for Use

The chart is used with a straight edge. This is placed
n in Fig. 1 and the values of G, D, Q and V, etc.
read off directly.

The requirements of local Authority, viz., minimum
ximum velocities of flow, entrance allowance and
ation of Impermeable area must be ascertained.

Practical considerations of gradient, area and length
ained from the road plans and sections and are
in diagram form, Fig. 2, the drains W, X, and Y
mple sewers and Z being determined by the effective
concentration point (1). Results should be tabulated
. All known figures are shewn in heavy type.

APPROXIMATION.

ce rule on ringed point on scale q (point 1·5) and
rea value on scale A. Read off on scale D the nearest
of pipe.

ENT, CAPACITY AND VELOCITY.

ce the rule on the diameter D, and on the gradient G,
l off the capacity Q and the velocity V. Record
d subsequent figures obtained from the chart on a
h as Fig. 3.

TIME OF CONCENTRATION.

Place the rule on the velocity V and on the length L, and read off the time of concentration T.

DISCHARGE PER ACRE.

Read horizontally from the time of concentration T, to the first, second or third column adjacent, according to whether the entrance allowance is 3, 4 or 5 minutes.

TOTAL DISCHARGE.

Mark off the discharge per acre just found, on the scale q, and with the rule on this point and on the area A, read off the total discharge on scale Q.

CHECK.

If this discharge is less than the capacity of the sewer as found in par. 3, the sewer is adequate. If not, a larger diameter pipe must be tried.

SUMMARY.

Gradient G, and Diameter D give Capacity Q, and Velocity V.

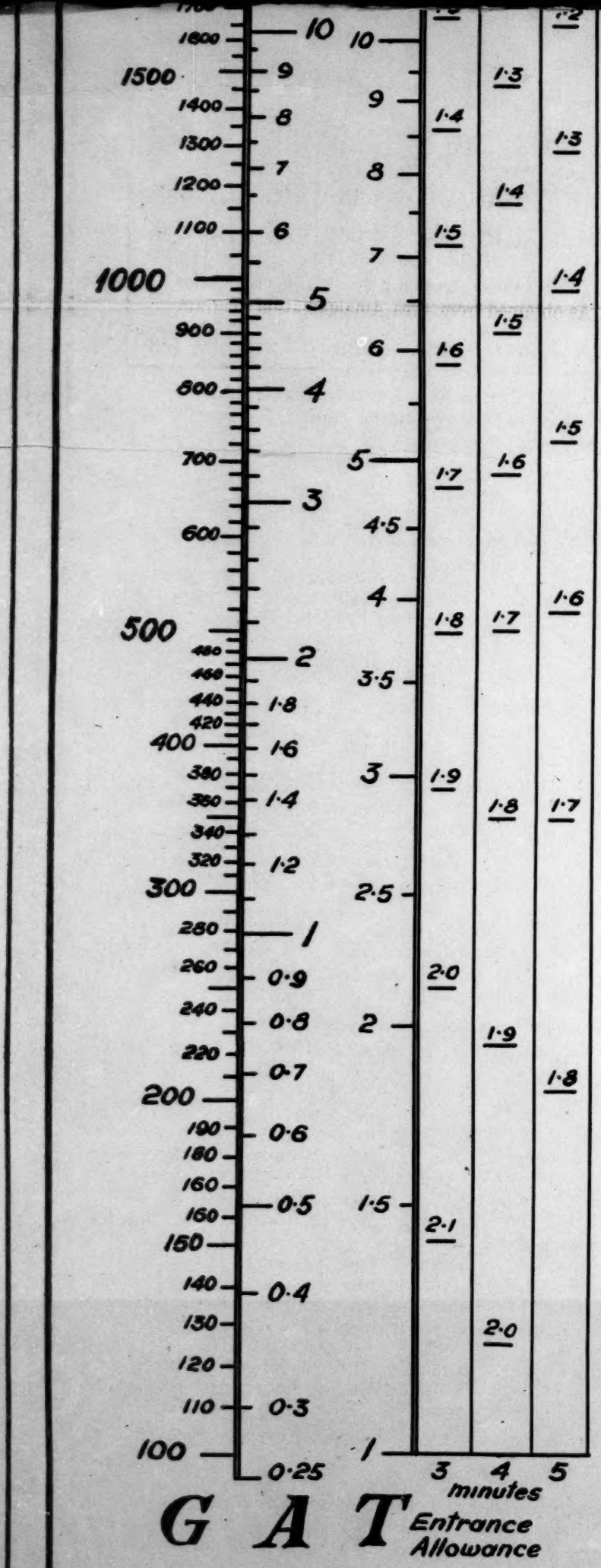
Velocity V, and Length L give Time of Concentration T.

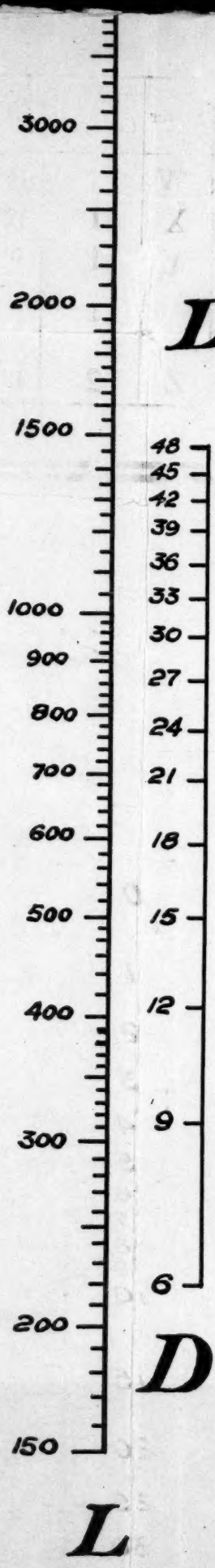
Time of Concentration T gives discharge-per-acre q.

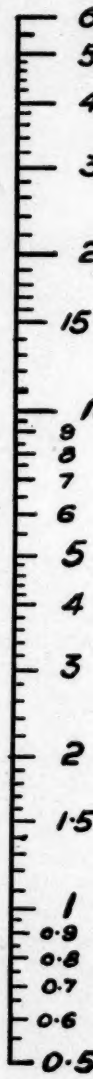
Discharge per acre q, and Area A give Discharge Q.

Sewer	P. of Concent.	D	G	V	Q (Capacity)	L feet	T	q (d.p.a.)	A	Q (discharge)
W	1	15″	1/300	3·3	4	800	4·0	1·78	2 acres	3·4
X	1	12″	1/220	3·3	2·6	1600	8·0	1·43	1·6 acres	2·2
Y	1	9″	1/200	2·88	1·25	400	2·4	1·98	·5 acres	1·0
	1				Time of Concentration 2·4 2·8 effective Acres As obtained from Area Amalgamation diagram					
Z	2	18″	1/350	3·5	6·05	400	2·4	2·08	2·8	5·3

Fig. 3. Tabulating the dimensions for future reference.
(Heavy type shows known figures.)

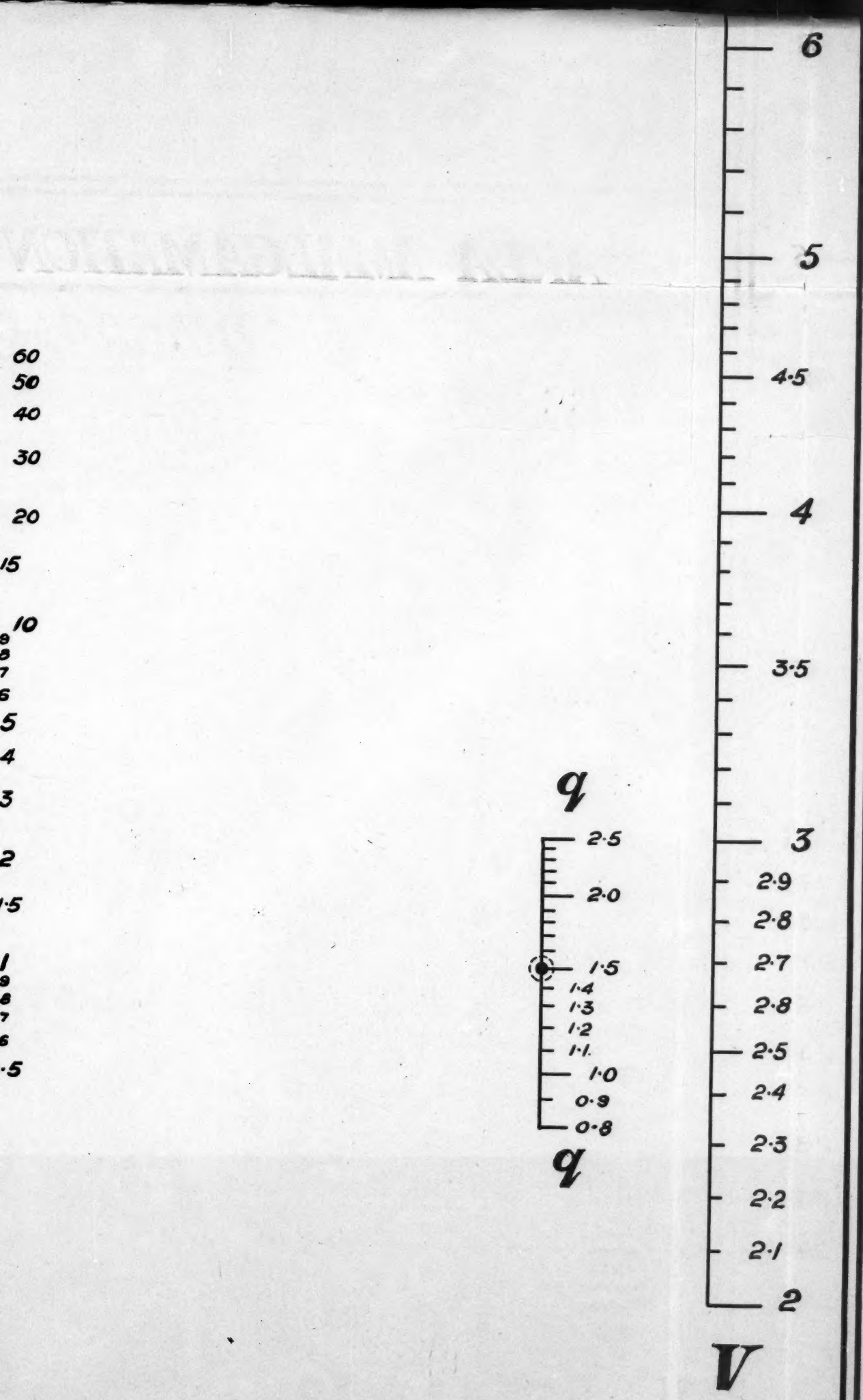






Copyright, 1936.

table such as



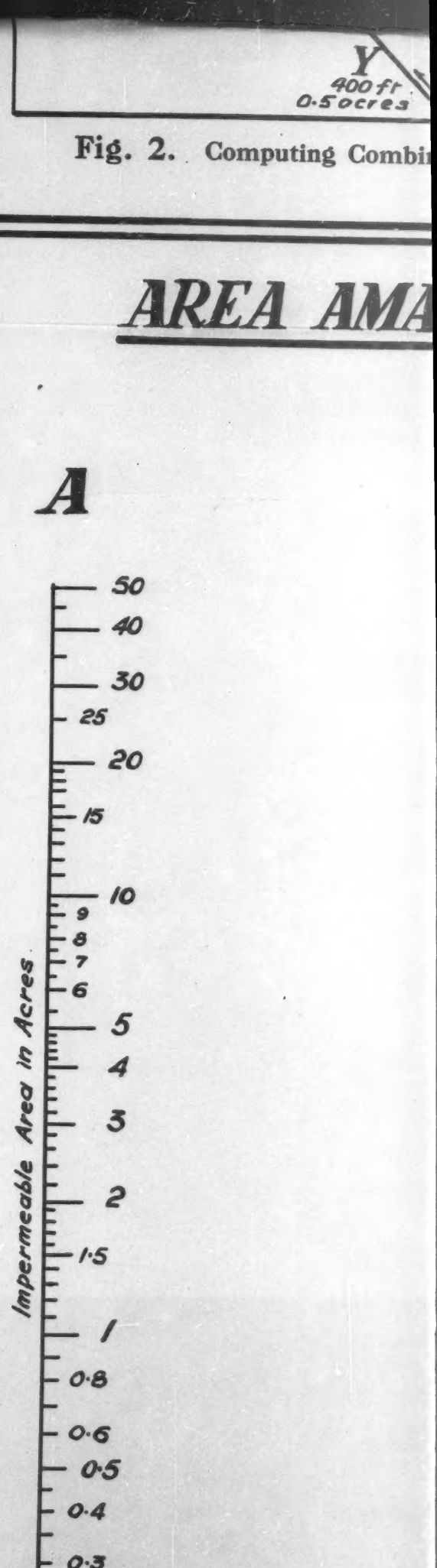


Fig. 2. Computing Combi

table such as Fig

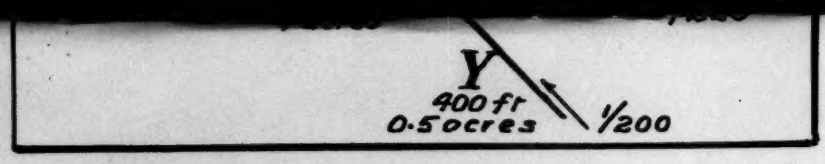
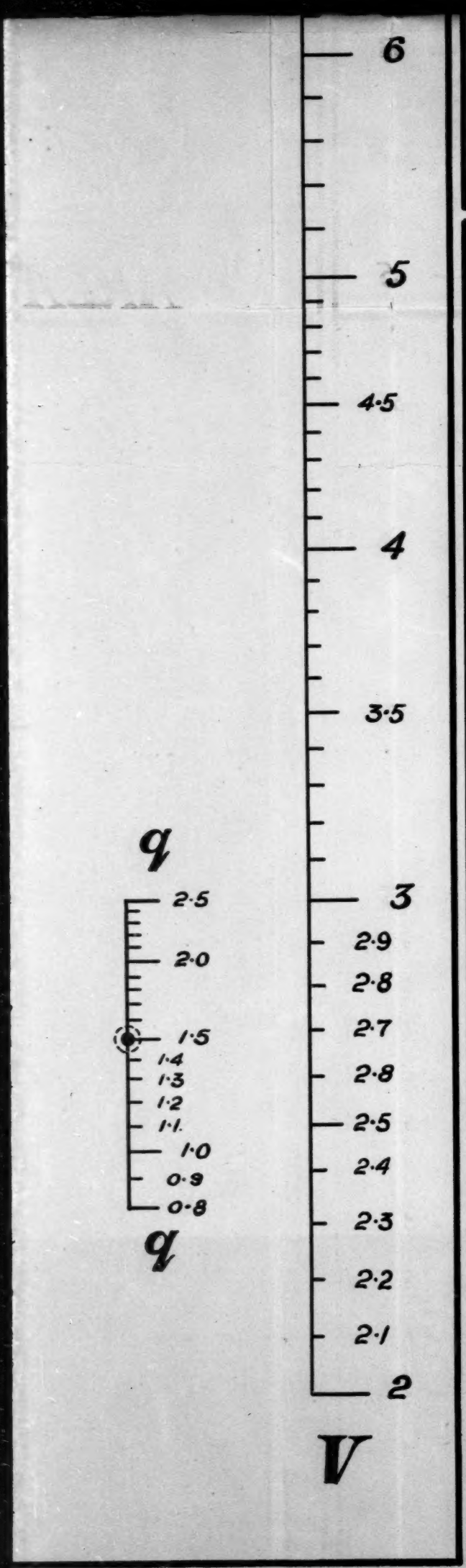
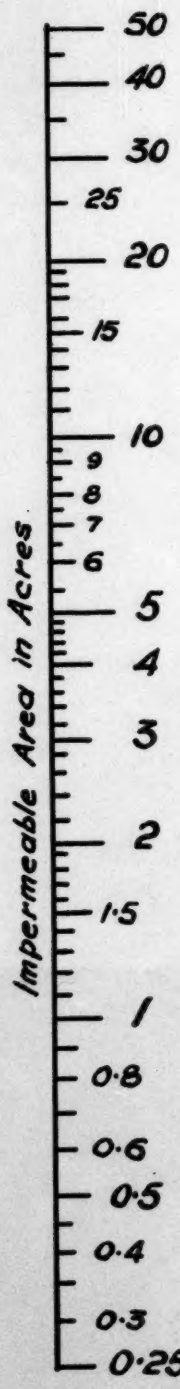
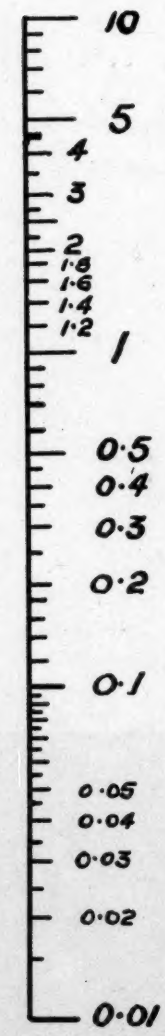


Fig. 2. Computing Combined Areas.

AREA AMALGAMATION DIAGRAM



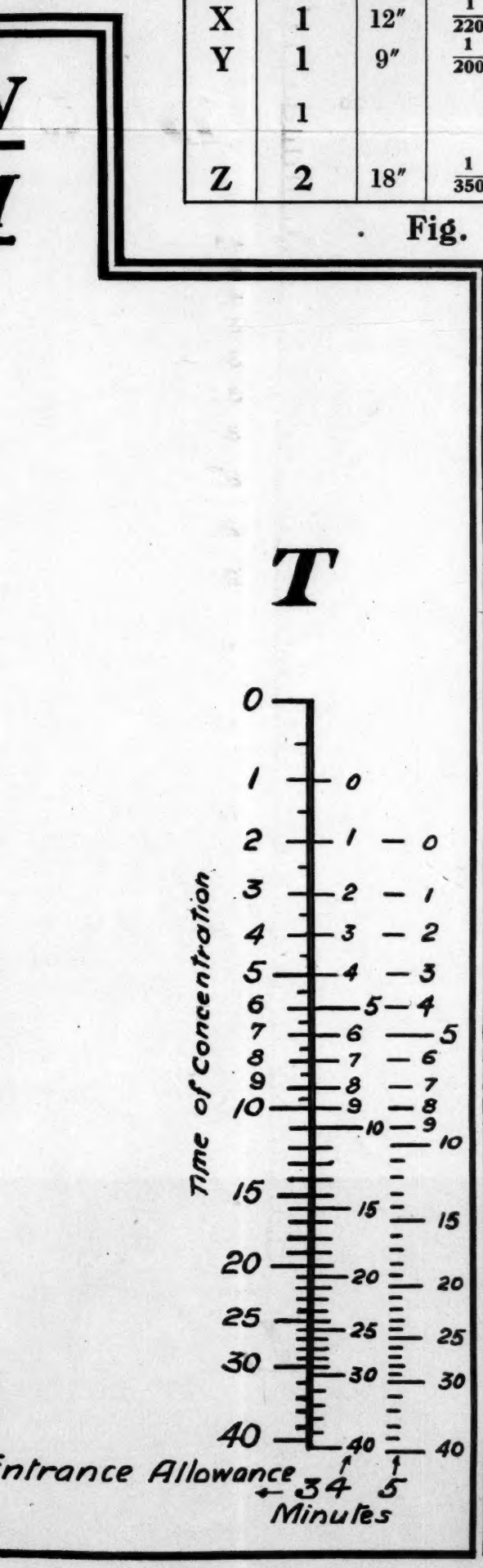




En

Sewer	P. of Concent.	D	G	V	Q (Capacity)	L feet	T	q (d.p.a.)	A	Q (discharge)
W	**1**	15″	$\frac{1}{300}$	3·3	4	**800**	4·0	1·78	**2** acres	3·4
X	**1**	12″	$\frac{1}{220}$	3·3	2·6	**1600**	8·0	1·43	**1·6** acres	2·2
Y	**1**	9″	$\frac{1}{200}$	2·88	1·25	**400**	2·4	1·98	**·5** acres	1·0
	1				Time of Concentration 2·4 2·8 effective Acres As obtained from Area Amalgamation diagram					
Z	**2**	18″	$\frac{1}{350}$	3·5	6·05	400	2·4	2·08	2·8	5·3

Fig. 3. **Tabulating the dimensions for future reference.**
(Heavy type shows known figures.)



Amalgamation of Areas

When at any point sewers are combined, as for instance at point No. 1 in block plan Fig. 2, and for computing the sewer Z in the table Fig. 3, the sewer from this junction need not have a capacity equal to the sum of the capacities. The effective area must be obtained. The area amalgamation scale is used for this purpose.

A_T VALUES.

The central scale has the property of being additive.

METHOD OF USE.

Abstract time values T, and Area A, of the three tributary sewers W, X and Y from the table Fig. 3, and set out as follows:—

sewer W —	A=2·0	T=4·0	A_T=·29
sewer X —	A=1·6	T=8·0	A_T=·15
sewer Y —	A= ·5	T=2·4	A_T=·10
		Added A_T value	=·54

Placing the rule on scales A and T read off the A_T value in each case, as above, and add same together. The sum of the results is noted. Added A_T value=·54. With the rule on the least time of concentration value (T scale), 2·4 minutes in the example, and at point ·54 on the A_T scale, read off the effective area, viz.:—2·8 effective acres, and note both figures as shewn in the table (Fig. 3).

APPLICATION OF COMBINATION.

(*a*) Referring to the Main Diagram, 2·4 on the T scale read off horizontally, is 1·96 at the 3 minutes allowance. This value is marked on the q scale. The alignment from this point to 2·8. (effective acres) on the A scale gives the discharge (on scale Q) as 5·3 cu. ft. per sec.

(*b*) The Main Diagram will shew that an 18″ sewer at 1 in 350 has a capacity (Q) of 6·05 cusecs and a velocity (V) of 3·5, which is greater than the required discharge. For the next portion of the sewer, the acreage between points 1 and 2 would be added to the effective acreage drained up to point 1. The length of the sewer would be from the head Y (least length) to point 2, viz.: 400 feet + 300 feet, total 700 feet for which a time is easily determined as described in Par. 3.

GENERAL NOTES ON TIME OF CONCENTRATION SCALES.

The time of concentration scales on both the Main Diagram and the Area Amalgamation Diagram automatically include the entrance allowance. Points are taken on the T line for the 3 minutes allowance, and readings may be taken horizontally on the adjacent allowance scales, according to the particular allowance stipulated.

"Cusecs" is a contraction for the words "cubic feet per second."